142866

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

MAY 30 1990

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

5HS-11

North Shore Gas Co.
3001 Grand Ave.
Waukegan, IL 60085

Re: Waukegan Coke Plant Site
Waukegan, Illinois

Dear Sir or Madam:

The United States Environmental Protection Agency (U.S. EPA) has documented the release or threatened release of hazardous substances, pollutants and contaminants at the above referenced site (hereinafter referred to as the Site), and has initiated a remedial investigation/feasibility study (RI/FS) for the control of the release or threatened release at the Site. Unless the U.S. EPA determines that a potentially responsible party (PRP) will properly and promptly perform such action, the U.S. EPA will commence further action pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (CERCLA), 42 U.S.C. Section 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499, 100 Stat. 1613 (1986) (SARA). The U.S. EPA has information that you may be a PRP. Therefore, pursuant to Section 122(e) of SARA, this letter is to notify you of your potential liability with respect to the Site.

According to Section 107 of CERCLA, PRPs who may be liable include the current and former owners or operators of the Site, and persons who generated the hazardous substances or were involved in the transport, treatment, or disposal of them at the Site. Pursuant to Section 122(e) of SARA, the U.S. EPA has determined that a period of negotiation will facilitate an agreement with you and the other PRPs. You will have a maximum of 60 calendar days from the date of receipt of this Special Notice Letter to coordinate with any other PRPs and to present to the U.S. EPA a "good faith" proposal that includes a definite start date and time lines for implementing and conducting the following activities:

1. A Remedial Investigation to identify the local hydrogeological characteristics and to define the nature and extent of soil, air, ground and surface water contamination at the Site, and

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RETURN RECEIPT REQUESTED

5HS-11

General Motors Corp.
General Motors Building
Detroit, MI 48202

Re: Waukegan Coke Plant Site
Waukegan, Illinois

Dear Sir or Madam:

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REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

MAY 30 1990

CERTIFIED MAIL
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5HS-11

Mr. Roger Crawford
Outboard Marine Corp.
100 Sea Horse Dr.
Waukegan, IL 60085-2195

Re: Waukegan Coke Plant Site
Waukegan, Illinois

Dear Mr. Crawford:

The United States Environmental Protection Agency (U.S. EPA) has documented the release or threatened release of hazardous substances, pollutants and contaminants at the above referenced site (hereinafter referred to as the Site), and has initiated a remedial investigation/feasibility study (RI/FS) for the control of the release or threatened release at the Site. Unless the U.S. EPA determines that a potentially responsible party (PRP) will properly and promptly perform such action, the U.S. EPA will commence further action pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, (CERCLA), 42 U.S.C. Section 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499, 100 Stat. 1613 (1986) (SARA). The U.S. EPA has information that you may be a PRP. Therefore, pursuant to Section 122(e) of SARA, this letter is to notify you of your potential liability with respect to the Site.

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1. A Remedial Investigation to identify the local hydrogeological characteristics and to define the nature and extent of soil, air, ground and surface water contamination at the Site, and

2. A Feasibility Study to develop and evaluate possible remedial actions to remove or contain hazardous substances, pollutants, and contaminants at the Site.

A "good faith" proposal is a written proposal which demonstrates the PRPs' qualifications and willingness to conduct or finance the Remedial Investigation/Feasibility Study (RI/FS). A "good faith" proposal should include the following:

o A statement of the PRPs' willingness to conduct or finance the RI/FS that is generally consistent with EPA's enclosed statement of work and draft administrative order on consent and provides a sufficient basis for further negotiations;[if more than 10 PRPs, state that the order and SOW will be provided at the meeting scheduled below]

o A paragraph-by-paragraph response to EPA's draft administrative order on consent;

o A demonstration of the PRPs' technical capability to undertake the RI/FS. Include the name of the contractor you have selected to conduct the RI/FS and a summary of the contractor's qualifications.

o A demonstration of the PRPs' financial capability to finance the RI/FS;

o A statement of the PRPs' willingness to reimburse EPA for the costs EPA incurs in overseeing the PRP conduct of the RI/FS as required by Section 104(a)(1); and

o The name, address, and phone number of the party or steering committee who will represent the PRPs in negotiations.

The U.S. EPA would like to encourage "good faith" negotiations among you, other PRPs, and the Agency. If several PRPs are interested in conducting the Remedial Investigation/Feasibility Study (RI/FS), it will be necessary to organize yourselves into a single representative body. To facilitate this, the Agency has enclosed a list of names and addresses of other PRPs who are receiving this letter.

During the 60 calendar day period, beginning on the date of receipt of this Special Notice Letter, the U.S. EPA will not commence the RI/FS at the Site. If the PRPs provide the Agency with a written "good faith" proposal with a definite start date and time line for implementing the RI/FS within the 60 calendar day period, the U.S. EPA will extend the moratorium on commencement of the RI/FS work an additional 30 calendar days. The purpose of this additional time is to allow the PRPs and the Agency adequate time to finalize a settlement.

To further facilitate your ability and the ability of any other PRPs to present a "good faith" proposal within the 60 day time limit, a meeting will be held on June 12, 1990, at 1 p.m., at the USEPA Office, 230 S. Dearborn St.

Chicago, IL, 11th floor conference room to discuss this matter further.

Except in extraordinary circumstances explained in a written request, no extension to this 60 day period will be considered by the Agency. If a "good faith" proposal is not received within 60 calendar days, the U.S. EPA, pursuant to Section 122(e)(4) of SARA, will proceed to perform the RI/FS using public funds available to the Agency. This Special Notice does not preclude the Agency from performing other studies or investigations under Section 104(b) of CERCLA as modified by SARA.

If you are already involved in discussions with State or local authorities, engaged in voluntary action, or involved in a lawsuit involving the Site, you may continue such activities. This letter is not intended to advise or direct you to restrict or discontinue any such activities. You are advised, however, to report the status of the discussions or actions in your proposal to the Agency and to provide a copy of your proposal to any other parties involved in those discussions or actions. Also, pursuant to Section 122 (e)(6) of CERCLA, specific authorization is required from U.S. EPA prior to undertaking any remedial action.

Under Section 106(a) of CERCLA, PRPs may be ordered to implement relief actions deemed necessary by U.S. EPA to protect the public health, welfare or the environment from an imminent and substantial endangerment because of an actual or threatened release of a hazardous substance from the Site.

Under Section 107(a) of CERCLA, PRPs may be liable for costs incurred by the government, through the use of public funds, while responding to any release or threatened release from the Site. Such costs can include, but are not limited to, expenditures for planning, investigation, studies, clean-up, and enforcement.

Following completion of the RI/FS and any other necessary studies, U.S. EPA will determine the appropriate remedial action for the Site. You may then be contacted again to undertake implementation of such a remedy, possibly including design.

Your written response should be sent to:

Ms. Cindy J. Nolan, 5HS-11
U.S. Environmental Protection Agency
Remedial and Enforcement Response Branch
230 South Dearborn Street
Chicago, Illinois 60604

If you have an attorney handling your legal matters, please direct his or her questions to Mr. Shawn Mulroney, of the Office of Regional Counsel, U.S. EPA Region V, at (312) 886-7150.

If you need further information regarding this letter, you may contact Ms. Cindy J. Nolan of the Remedial and Enforcement Response Branch, U.S. EPA Region V, at (312) 886-0400.

By a copy of this letter, the Agency is notifying the State of Illinois and the Natural Resource Trustees of our intent to enter negotiations for a RI/FS at this Site.

The Agency strongly encourages you to take immediate steps to familiarize yourself with the Site conditions and organize into a committee or committees to negotiate an agreement with the U.S. EPA to conduct an RI/FS. We hope that you will give this matter your immediate attention.

Sincerely yours,

John Kelley, Acting Chief
Remedial and Enforcement Response Branch

Enclosures

cc: Sheila Huff, DOI
Terry Ayers, IEPA
Douglas J. Rathe, IAG
Mark Frech, IDOC
Don Etchison, IDENR
Don Vonnahne, IDOT

POTENTIALLY RESPONSIBLE PARTIES
Waukegan Coke Plant Site, Waukegan, IL

Party	Address
Outboard Marine Corp.	100 Sea Horse Dr. Waukegan, IL 60085
General Motors Corp.	General Motors Building Detroit, MI 48202
North Shore Gas Co.	3001 Grand Ave. Waukegan, IL 60085

ADMINISTRATIVE ORDER ON CONSENT RE:
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
FOR THE WAUKEGAN COKE PLANT SITE
WAUKEGAN, ILLINOIS

U.S. EPA DOCKET NO. _____

THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

THE ILLINOIS ENVIRONMENTAL AGENCY

Table of Contents to the Administrative Order on Consent for RI/FS at the WAUKEGAN COKE PLANT SITE

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

IN THE MATTER OF: Waukegan Coke Plant Site Waukegan, Illinois Outboard Marine Corporation, General Motors, Inc., North Shore Gas Co. Waukegan Coke Co. Respondents, Proceeding under Sections 104, 122(a), and 122(d)(3) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended.	)	U.S. EPA DOCKET NO.

ADMINISTRATIVE ORDER ON CONSENT RE:
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY

The United States Environmental Protection Agency ("U.S. EPA"), ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("IEPA") and the Respondents have agreed to the making and entry of this Administrative Order on Consent ("Consent Order").

I. JURISDICTION

A. This Consent Order is issued pursuant to the authority vested in the President of the United States by Sections 104, 122(a) and 122(d)(3) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. § 9601 et seq., and delegated to the Administrator of the U.S. EPA on January 23, 1987, by Executive Order 12580, 52 Federal Register 2926 (January 29, 1987), further delegated to the Regional Administrators by U.S. EPA Interim Delegation No. 14-14-C on February 26, 1987, and further delegated to the Director

of the Waste Management Division by Region V Delegation No. 14-14-C on September 14, 1987. This Consent Order is also issued pursuant to the authority vested in the IEPA by the Illinois Environmental Protection Act, Illinois revised statutes 1987, Chapter 111 1/2, Paragraph 1001, et seq.

B. The Respondents to this Consent Order agree to undertake all actions required by the terms and conditions hereunder, and consent to and will not contest or legally challenge the validity of this Consent Order or its terms, or the U.S. EPA's or IEPA's authority or jurisdiction to issue or enforce this Consent Order.

II. NOTICE OF ACTION

A. The U.S. EPA has notified persons whom it considers to be potentially responsible parties ("PRPs") as of the date of entry of this Consent Order of this action and has provided each PRP with the names and addresses of the PRPs, the volume and nature of substances contributed by each PRP, and a ranking by volume of the substances at the Facility, to the extent such information is available, pursuant to Section 122(e) of CERCLA.

B. The U.S. EPA has notified the Federal Natural Resource trustee of the negotiations in this action pursuant to the requirements of Section 122(j) of CERCLA. The IEPA has notified, pursuant to Section 104(b) of CERCLA, the State Natural Resource Trustees, who are the Director of the Department of Energy and Natural Resources, the Director of the Department of Conservation, the Director of the Division of Water Resources of

the Illinois Department of Transportation, and the Director of IEPA.

III. PARTIES BOUND

A. This Consent Order applies to and binds the following persons as defined in Section 101(21) of CERCLA:

(1) The U.S. EPA, through the Director of the Waste Management Division, Region V;

(2) The IEPA, through its Director;

(3) The following persons as defined in Section 101(21) of CERCLA, herein referred to as the Respondents:

Outboard Marine Corporation
General Motors, Inc.
North Shore Gas, Co.

(4) the successors and assignees of the Respondents; and,

(5) the agents of the Respondents responsible for carrying out the Respondents' obligations under this Consent Order.

B. The undersigned representatives of the U.S. EPA, the IEPA and Respondents each certifies that he or she is fully authorized to enter into the terms and conditions of this Consent Order and to execute and legally bind the party he or she represents to this document. The Respondents shall be jointly and severally responsible for carrying out all actions required of the Respondents by the terms and conditions of this Consent Order.

C. No change in ownership, corporate, or partnership status shall in any way alter the status or responsibility of

the Respondents under this Consent Order. The Respondents shall provide copies of this Consent Order to any and all subsequent owners or successors before ownership rights or stock or assets in a corporate acquisition are transferred. The Respondents shall be responsible for ensuring that all officers, directors, principals, contractors, consultants, firms and other persons or entities acting under or for the Respondents with respect to all matters herein comply with the terms of this Consent Order. The Respondents shall be responsible for ensuring that all persons acting under or for the Respondents with respect to all matters herein comply with the terms of this consent order. The Respondents shall provide copies of this Consent Order to all contractors, subcontractors, laboratories, consultants, firms and other persons or entities retained to conduct any work under this Consent Order within fourteen (14) days after the effective date of this Consent Order or the date of retaining their services, whichever is later.

IV. STATEMENT OF PURPOSE

A. The objectives of this Consent Order, and the mutual objectives of the U.S. EPA, the IEPA and the Respondents in entering this Consent Order, are for the Respondents to: (1) fully determine the nature and extent of the potential threat to the public health, welfare or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants from or at the Facility by conducting a Remedial

Investigation ("RI"); (2) determine and evaluate alternatives for remedial action to prevent, mitigate or otherwise remedy any release or threatened release of hazardous substances, pollutants or contaminants from or at the Facility by conducting a Feasibility Study ("FS"); and (3) recover response and oversight costs incurred by the U.S. EPA and the IEPA with respect to this action.

B. The activities conducted pursuant to this Consent Order are subject to approval by the U.S. EPA, in consultation with the IEPA, as provided herein, shall employ sound scientific, engineering and construction practices and shall be consistent with CERCLA, the National Contingency Plan ("NCP"), 40 CFR Part 300, as amended, and applicable State laws and regulations.

V. FINDINGS OF FACT

Based upon information available on the effective date of this Consent Order, the Director of the Waste Management Division, Region V and the Director of the IEPA make the following findings:

A. Waukegan Coke Plant Site (the "facility") is located near the intersection of Grand Avenue and Sheridan Road on the west shore of Lake Michigan in Waukegan, Illinois.

B. The Waukegan Coke Plant Site is bordered on three sides by Lake Michigan. To the west side is Waukegan Harbor, a recreational and commercial use harbor. South of the Facility is the harbor channel from Lake Michigan. The Facility is bordered

to the east by the City of Waukegan Public Beach and Lake Michigan.

C. The City of Waukegan Water Treatment Plant is located on the property pennisula, south of the Facility. The emergency drinking water intake pipe is located approximately 2000 feet from the Water Plant. The main drinking water intake pike is approximately one mile from the Water Plant into Lake Michigan.

D. The Facility was operated as a coke plant, generating steam and electrical power for the City of Waukegan as early as 1927.

E. The Facility had multiple owners while being used as a coke plant until purchased by the Outboard Marine Corporation in 1971. At that time all production ceased, the plant was dismantled and some waste materials were disposed on-site. A portion of the facility was sold to the Waukegan Port Authority for future recreational use.

F. As a result of field investigations of the Facility for a construction project, soil and groundwater contamination was discovered to contain Polynuclear Aromatic Hydrocarbons (PAHs) and phenolic compounds. A limited investigation was conducted in July and August, 1989. PAH compounds range from 0 to 25,750 ppm in the soil. Phenols have leached to the groundwater at concentrations from 0 to 296 ppm.

VI. CONCLUSIONS OF LAW

Based upon information available on the effective date of this Consent Order, the Director of the Waste Management Division, Region V and the Director of the IEPA make the following conclusions of law:

A. The Waukegan Coke Plant site is a "facility" as defined in Section 101(9) of CERCLA;

B. "Hazardous substances", as defined in Section 101(14) of CERCLA, have been deposited, stored, disposed of, placed, or otherwise located at the Facility;

C. Each Respondent is a "person" as defined in Section 101(21) of CERCLA;

D. The presence of hazardous substances at the Facility or the past, present or potential migration of hazardous substances currently located at or emanating from the Facility constitutes a "release" or substantial threat of "release", as defined in Section 101(22) of CERCLA, into the environment of a hazardous substance from or at the Facility; and,

E. Each Respondent is a liable person pursuant to Section 107 of CERCLA and a potentially responsible party for the purposes of Section 122 of CERCLA.

Unless otherwise defined herein, terms used in this Consent Order shall have the meaning defined in CERCLA, the NCP or applicable U.S. EPA guidance and "days" shall mean calendar days.

VII. DETERMINATIONS

The Director of the Waste Management Division, Region V and the Director of the IEPA have determined that:

A. The Respondents will promptly and properly take appropriate response action at the Facility by conducting a Remedial Investigation and Feasibility Study ("RI/FS") and are qualified to perform the RI/FS; and

B. The actions required by this Consent Order are in the public interest and are consistent with CERCLA and the NCP.

VIII. WORK TO BE PERFORMED

A. All work to be performed by the Respondents pursuant to this Consent Order shall be under the direction and supervision of a qualified professional engineer or certified geologist. Prior to the initiation of work at the Facility, the Respondents shall notify the U.S. EPA and the IEPA, in writing, of the name, title, and qualifications of the proposed engineer or geologist, and of the names of principal contractors and/or subcontractors proposed to be used in carrying out the work to be performed pursuant to this Consent Order. U.S. EPA reserves the right to disapprove the selected contractor. The Respondents reserve the right to replace the engineer, geologist, contractor and/or subcontractor for cause, except that any such replacement shall be subject to the notice and approval requirements of this paragraph and shall not be cause for delay of performance of work required by this Consent Order.

B. Attachment I to this Consent Order provides a Statement of Work For Conducting a Remedial Investigation and Feasibility Study at the Waukegan Coke Plant Site, Waukegan, Illinois ("SOW"), which is incorporated into and made a part of this Consent Order.

C. Respondents shall perform the following work:

1. Within sixty (60) days of the effective date of this Consent Order, the Respondents shall submit to the U.S. EPA and the IEPA a Work Plan for a complete RI/FS for the Facility (hereinafter, "RI/FS Work Plan"). The RI/FS Work Plan shall be developed in conformance with the attached SOW, the standards set forth in Section 121 of CERCLA, U.S. EPA guidance on remedial investigations and feasibility studies and any additional guidance documents provided by the U.S. EPA.

2. The RI/FS Work Plan submittal shall include, but not be limited to, the following project plans: (1) a sampling plan; (2) a quality assurance project plan; (3) a health and safety plan; (4) a Technical Scope of Work. The RI/FS Work Plan's Technical Scope of Work shall include, but not be limited to, (1) a Preliminary Site Evaluation; (2) provisions for the preparation of a risk/endangerment assessment; (3) a schedule for implementation of the RI/FS tasks; and (4) a schedule for submission of the RI/FS deliverables. The RI/FS Work Plan's Technical Scope of Work shall provide, at a minimum, for the submittal of preliminary and final RI Reports, preliminary and

final risk/endangerment assessments and preliminary and final FS Reports, to be prepared in accordance with applicable guidance.

3. The RI/FS Work Plan shall be subject to review, modification, and approval by the U.S. EPA, in consultation with the IEPA.

4. Within forty-five (45) days of receipt of the RI/FS Work Plan, the U.S. EPA Project Coordinator shall notify the Respondents, in writing, of approval or disapproval of the RI/FS Work Plan, or any part thereof. If a longer review period is required, the U.S. EPA Project Coordinator shall notify the Respondents of that fact within thirty (30) days of receipt of the Work Plan. In the event of disapproval of the RI/FS Work Plan, or any part thereof, the U.S. EPA shall specify, in writing, any deficiencies and required modifications to the RI/FS Work Plan.

5. Within thirty (30) days of receipt of any U.S. EPA written disapproval of the RI/FS Work Plan, or any part thereof, the Respondents shall submit a revised RI/FS Work Plan to the U.S. EPA and the IEPA, which incorporates the U.S. EPA comments and specified modifications.

6. In the event of subsequent U.S. EPA disapproval of the revised RI/FS Work Plan, or any part thereof, the U.S. EPA retains the right to terminate this Consent Order, conduct a complete RI/FS and seek reimbursement from the Respondents and the U.S. EPA and the IEPA each retains the right to enforce the

terms of this Consent Order in the appropriate judicial or administrative forum.

7. The Respondents shall implement the work detailed in the RI/FS Work Plan, according to the schedule contained therein, if and when the RI/FS Work Plan is fully approved by the U.S. EPA, in consultation with the IEPA. Unless otherwise directed by the U.S. EPA, the Respondents shall not commence field activities until approval, in writing, by the U.S. EPA of the RI/FS Work Plan. The final, U.S. EPA-approved RI/FS Work Plan shall be attached hereto as Attachment II and shall be deemed incorporated into and made an enforceable part of this Consent Order. All work shall be conducted in accordance with the National Contingency Plan, applicable RI and FS guidance and the requirements of this Consent Order, including the standards, specifications and schedule contained in the RI/FS Work Plan.

IX. PLANS AND REPORTS

A. The Respondents shall provide preliminary and final Remedial Investigation Reports, preliminary and final risk assessments and preliminary and final Feasibility Study Reports, as well as any other plans or reports required by the RI/FS Work Plan, to the U.S. EPA and the IEPA according to the schedule contained in the RI/FS Work Plan.

B. The U.S. EPA and the IEPA shall review, and the U.S. EPA shall approve, the preliminary and final Remedial Investigation Reports, the preliminary and final risk assessments, the

preliminary and final Feasibility Study Reports and any other preliminary or final plans or reports specified in the RI/FS Work Plan as requiring U.S. EPA approval.

C. If the U.S. EPA, in consultation with the IEPA, disapproves any preliminary plan or report, the U.S. EPA shall specify, in writing, any deficiencies in and required modifications to such plan or report. Within fifteen (15) days of receipt of U.S. EPA's comments or such longer period as the U.S. EPA Project Coordinator may establish, the Respondents shall submit a revised plan or report, which incorporates all U.S. EPA comments and modifications, to the U.S. EPA and the IEPA.

D. In the event of subsequent U.S. EPA disapproval of any revised plan or report, the U.S. EPA retains the right to terminate this Consent Order and perform additional studies and to conduct a complete or partial RI/FS and the U.S. EPA and the IEPA each retains the right to enforce the terms of this Consent Order in the appropriate judicial or administrative forum.

E. The Respondents shall provide monthly written progress reports to the U.S. EPA and the IEPA according to the schedule contained in the RI/FS Work Plan. At a minimum, these monthly written progress reports shall include the following:

1. A description of the action which has been taken toward achieving compliance with this Consent Order;

2. All results of sampling and tests and all other data (which have completed the quality assurance and quality control procedures established in the approved QAPP) produced during the month and relating to the Facility;

3. Target and actual completion dates for each element of activity, including the project completion, an explanation of any deviation or anticipated deviation from the RI/FS Work Plan schedule, and proposed method of mitigating such deviation;

4. A description of difficulties encountered during the reporting period and the actions taken to rectify the problems; and,

5. Changes in key personnel.

F. The monthly written progress reports shall be submitted to the U.S. EPA and the IEPA by the fifth (5th) business day of each month following the date of commencement of the work detailed in the RI/FS Work Plan.

G. Neither failure of the U.S. EPA or the IEPA to expressly approve or disapprove of a submission by the Respondents within the specified time period nor the absence of comments shall be construed as approval of such submission by the U.S. EPA or the IEPA.

X. ADDRESSES FOR ALL CORRESPONDENCE

Documents, including reports, approvals, disapprovals and other correspondences to be submitted pursuant to this Consent Order shall be sent by certified mail, overnight courier or personal delivery to the following addresses, or to such other addresses or addressees as the Respondents, the IEPA or the U.S. EPA may hereafter designate in writing:

A. Twelve copies (or such other number as the U.S. EPA Project Coordinator may designate) of all documents to be submitted to the U.S. EPA should be sent to:

Remedial & Enforcement Response Branch (5HS-11)
U.S. Environmental Protection Agency, Region V
230 S. Dearborn Street
Chicago, Illinois 60604
attn: Remedial Project Manager, 5HS-11
Waukegan Coke Plant Site

In addition, two copies of all documents to be submitted to the U.S. EPA should be sent to an oversight contractor identified by the U.S. EPA Project Coordinator.

B. Two copies of all documents to be submitted to the IEPA should be sent to:

Illinois Environmental Protection Agency
Division of Land Pollution Control
Federal Site Management Unit
Waukegan Coke Plant Site
2200 Churchill Road
Springfield, Illinois 62706
attn: State Project Manager
Scott Moyer

C. Documents to be submitted to the Respondents should be sent to a name and address to be designated by the Respondents within ten (10) days of the effective date of this Consent Order.

XI. ADDITIONAL WORK

A. In the event that the U.S. EPA, in consultation with the IEPA, or the Respondents determine that additional work, including remedial investigatory work and/or engineering evaluation, is necessary to accomplish the objectives of the RI/FS, notification of such additional work shall be provided to each of the other parties.

B. Any additional work determined to be necessary by the Respondents shall be subject to written approval by the U.S. EPA, in consultation with the IEPA.

C. Any additional work determined to be necessary by the Respondents or the IEPA and approved in writing by the U.S. EPA, or determined to be necessary by the U.S. EPA in consultation with the IEPA and requested of the Respondents by U.S. EPA in writing, shall be completed by the Respondents in accordance with the standards, specifications and schedule determined or approved in writing by the U.S. EPA in consultation with the IEPA.

XII. COMPLIANCE WITH APPLICABLE LAWS

All work undertaken by the Respondents pursuant to this Consent Order shall be performed in compliance with all applicable Federal, State and local laws, ordinances and regulations, including all Occupational Health and Safety Administration and Department of Transportation regulations. In the event of a conflict in the application of Federal, State, or local laws, ordinances and regulations, the Respondents shall comply with the more/most stringent such law, ordinance or regulation, unless provided otherwise in writing by the U.S. EPA. The Respondents shall be responsible for obtaining all State or local permits which are necessary for the performance of any work hereunder.

XIII. ACCESS AND HEALTH AND SAFETY PLAN

A. To the extent that the Facility or other areas where work is to be performed hereunder is presently owned by parties other than the Respondents, the Respondents shall obtain, or shall use their best efforts to obtain, access agreements from the present owners within thirty (30) days of approval of the RI/FS Work Plan. The Respondents' best efforts shall include, when necessary, the proffer of reasonable compensation to such other parties. Such agreements shall provide access for the U.S. EPA, the IEPA, and all authorized representatives of the U.S. EPA and the IEPA, as specified below, and shall be attached to this Consent Order as Attachment III. In the event that such access agreements are not obtained within the time referenced above, the Respondents shall so notify the U.S. EPA and the IEPA in writing.

The U.S. EPA reserves the right to terminate this Consent Order, perform a complete or partial RI/FS and seek reimbursement from the Respondents should the Respondents' inability to gain access to the Facility or other areas materially affect the Respondents' ability to perform all the work required herein.

B. Authorized representatives of the U.S. EPA and the IEPA shall be allowed access to the Facility, and to other areas where work is to be performed hereunder, by the Respondents, and as part of any agreement obtained under paragraph A above, for purposes including, but not limited to: inspecting records, operating logs and contracts related to the Facility; reviewing the progress of the Respondents in carrying out the terms of this

Consent Order; conducting such tests, inspections, and sampling as the U.S. EPA, in consultation with the IEPA, may deem necessary; using a camera, sound or video recording, or other documentary type equipment; and verifying the data submitted to the U.S. EPA and the IEPA by the Respondents pursuant to this Consent Order. The Respondents shall permit such authorized representatives to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, which pertain to this Consent Order, subject to Paragraph C of Article XV of this Consent Order (Sampling and Data/Document Availability) regarding confidentiality. All persons with access to the Facility pursuant to this Consent Order shall comply with the revised health and safety plan prepared by the Respondents.

C. Nothing herein shall be construed as restricting the inspection or access authority of the U.S. EPA or the IEPA under any applicable law, permit or regulation.

XIV. PROJECT COORDINATORS

A. On or before the effective date of this Consent Order, the Respondents shall designate a Project Coordinator, who shall have primary responsibility for implementation of all the work at the Facility, and the U.S. EPA and the IEPA shall each designate a Project Coordinator responsible for overseeing the implementation of the work. The Project Coordinators will serve as the designated representatives at the Facility for their

respective parties. To the maximum extent possible, communications between the Respondents, the IEPA and the U.S. EPA, and all documents, reports, approvals and other correspondences concerning the activities performed pursuant to the terms and conditions of this Consent Order, shall be directed through the Project Coordinators.

B. The U.S. EPA, the IEPA and the Respondents shall have the right to change their respective Project Coordinators. Such a change shall be accomplished by notifying the other parties in writing. To the extent possible, such notification shall occur at least ten (10) days prior to the change.

C. The U.S. EPA Project Coordinator shall have the all the authorities vested in an On-Scene Coordinator and a Remedial Project Manager ("OSC", "RPM") by the NCP, including the authority to halt, conduct, or direct any work required by this Consent Order or any response action taken by the U.S. EPA when conditions at the Facility may present an imminent and substantial endangerment to human health or welfare or the environment. The Respondents shall notify the U.S. EPA and the IEPA Project Coordinators immediately of any conditions at the Facility which may present and imminent and substantial endangerment to human health or welfare of the environment. If the U.S. EPA Project Coordinator halts work pursuant to this paragraph, the Respondents may request a modification of the schedule described in the RI/FS Work Plan and this Consent Order.

D. The absence of the U.S. EPA or IEPA Project Coordinator from the Facility shall not be cause for stoppage of work.

E. The Project Coordinator for the Respondents shall be on-site during all hours of work at the Facility and shall be on call throughout the pendency of this Consent Order.

XV. SAMPLING AND DATA/DOCUMENT AVAILABILITY

A. The Respondents shall make the results of all sampling, tests and other data generated by or on behalf of the Respondents pursuant to implementation of this Consent Order available to the U.S. EPA and the IEPA, and shall submit these results in written monthly progress reports, as required by Article IX of this Consent Order (Plans and Reports).

B. At the request of the U.S. EPA or the IEPA, the Respondents shall provide the requester with split or duplicate samples of any samples collected by the Respondents pursuant to the implementation of this Consent Order. The Respondents shall notify the U.S. EPA and the IEPA at least ten (10) business days in advance of any sample collection activity.

C. Pursuant to applicable Federal laws and regulations, (Section 104(e) of CERCLA and 40 CFR Part 2), the Respondents may assert a confidentiality claim with respect to any or all of the information requested or submitted pursuant to the terms of this Consent Order. Such an assertion must be adequately substantiated when the assertion is made. Analytical data and other information described in Section 104(e)(7)(F) of CERCLA

shall not be claimed as confidential by the Respondents. Information determined to be confidential by the U.S. EPA in accordance with applicable federal laws and regulations will be afforded the full protection provided by such laws and regulations. Information determined to be confidential by the IEPA pursuant to applicable State laws and regulations will be afforded the full protection provided by such laws and regulations. If no confidentiality claim accompanies information when it is submitted to the U.S. EPA and the IEPA, or if information claimed as confidential is determined by the U.S. EPA or the IEPA not to be confidential, the information may be made available to the public by the recipient.

XVI. QUALITY ASSURANCE

A. The Respondents shall prepare preliminary and final Quality Assurance Project Plans ("QAPP"s) for submittal to the U.S. EPA and the IEPA according to the schedule in the SOW. The Respondents shall participate in a pre-QAPP meeting with the U.S. EPA prior to submission of the preliminary QAPP to discuss the contents of the QAPP.

B. The QAPPs shall be subject to review, modification and approval by the U.S. EPA, in consultation with the IEPA, in accordance with Article IX (Plans and Reports).

C. The Respondents shall use quality assurance, quality control and chain of custody procedures in accordance with the "EPA NEIC Policies and Procedures Manual" (May 1978, revised

1984, EPA-330/9-78-001-R), the U.S. EPA "Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans" (December, 1980, QAMS-005/80), the "Final Standard Quality Assurance Project Plan Content Document" June 1989, and other applicable documents throughout all data collection activities.

D. The Respondents shall consult with the U.S. EPA and the IEPA Project Coordinators in planning for, and prior to, all sampling and analysis detailed in the RI/FS Work Plan. In order to provide quality assurance and maintain quality control with respect to all samples collected pursuant to this Consent Order, the Respondents shall:

1. Ensure that the U.S. EPA and IEPA personnel and/or authorized representatives are allowed access to any laboratories and personnel utilized by the Respondents for analyses;

2. Ensure that all sampling and analyses are performed according to the U.S. EPA methods or other methods deemed satisfactory by the U.S. EPA and include all protocols to be used for analyses in the Quality Assurance Project Plan; and,

3. Ensure that any laboratories utilized by the Respondents for analyses participate in a documented U.S. EPA Quality Assurance/Quality Control program equivalent to that followed by the U.S. EPA and consistent with U.S. EPA guidance (including document QAMS-005/80). As part of such a program, and upon request by the U.S. EPA, such laboratories shall perform analyses of samples provided by the U.S. EPA or the IEPA to

demonstrate the quality of analytical data for each such laboratory.

E. The Respondents waive any objection to the validity of data generated during the performance or oversight of the work required by this Consent Order provided that such data have been verified according to the Quality Assurance/Quality Control procedures contained in the approved QAPP.

XVII. TIMELINESS OF PERFORMANCE

A. The Respondents shall cause all work required under this Consent Order and Attachments, including Additional Work required pursuant to Article XI and any work required pursuant to a modification to this Consent Order under Article XXIX, to be performed within the time limits set forth in this Consent Order and Attachments or modifications or in a written approval or determination of Additional Work pursuant to Article XI. C, unless performance is delayed by a force majeure. For purposes of this Consent Order, a "force majeure" is an event entirely beyond the control of the Respondents. Neither increase in costs, Respondents' inability to pay costs, nor failure of a contractor to perform constitutes a force majeure.

B. The Respondents shall notify the U.S. EPA and the IEPA in writing no later than two (2) days after any event which causes a delay in performance, whether or not the Respondents contends such event constitutes a force majeure. Such notification shall describe the anticipated length of the delay,

the cause or causes of the delay, a statement as to whether, in the opinion of the Respondent, such event may cause or contribute to an endangerment to public health, welfare or the environment, the measures taken and to be taken by the Respondents to minimize the delay, and the timetable by which these measures will be implemented. The Respondent shall adopt all practicable measures to avoid minimize any delay. Failure to meet the above requirements in a timely manner shall constitute a waiver of any claim of force majeure. In any administrative or judicial proceeding concerning this Consent Order, the Respondents shall have the burden of demonstrating that a force majeure caused any delay in performance.

C. If the U.S. EPA, in consultation with the IEPA, determines that a delay in performance is attributable to a force majeure, U.S. EPA may, in writing, extend the time period for performance under this Consent Order for a time period not to exceed that attributable to the force majeure.

XVIII. STIPULATED PENALTIES

A. The Respondents shall be liable for payment into the Hazardous Substances Superfund administered by the U.S. EPA of the sums set forth below as stipulated penalties for each week or part thereof that the Respondents fail to submit a report or document or comply with a schedule in accordance with the requirements contained in this Consent Order, and Attachments or modifications, unless U.S. EPA determines that such delay is

attributable to a force majeure as defined in Article XVII (Timeliness of Performance) above. Such sums shall be due and payable within fifteen (15) days of receipt of notification from the U.S. EPA assessing the penalties. These stipulated penalties shall accrue in the amount of $5000.00 for the first week or part thereof, and $10,000.00 for each week or part thereof thereafter. Stipulated penalties shall begin to accrue on the day that performance is due or a violation occurs and extend through the period of correction. Payment shall be made in the manner described in Article XXIV below (Reimbursement of Costs).

B. The stipulated penalties set forth in paragraph A of this section shall not preclude the U.S. EPA or the IEPA from electing to pursue any other remedy or sanction because of the Respondents' failure to comply with any of the terms of this Consent Order, including a suit to enforce the terms of this Consent Order. Said stipulated penalties shall not preclude the U.S. EPA or the IEPA from seeking statutory penalties up to the amount authorized by law if Respondents fail to comply with any requirements of this Consent Order.

XIX. DISPUTE RESOLUTION

A. The parties shall use their best efforts to resolve all disputes or differences of opinion arising with regard to this Consent Order informally and in good faith. The resolution of any dispute regarding this Consent Order must be in writing and signed by the U.S. EPA.

B. If a dispute arises concerning this Consent Order, which the parties are unable to resolve informally, the parties shall implement the following procedures:

1. If, after ten (10) days, informal negotiations have not resolved the dispute, the Respondent shall present a written notice of such dispute by certified mail, overnight courier or personal delivery to the U.S. EPA and the IEPA. Such notice shall set forth the specific points of dispute, the position of the complaining party and the technical basis therefor, and any actions which the complaining party considers necessary to resolve the dispute;

2. Within ten (10) days of receipt of such a written notice, the U.S. EPA in consultation with the IEPA shall provide a written response to the complaining party and to one another setting forth their respective positions and the basis therefor. During the five (5) business days following receipt of the response, the parties shall attempt to negotiate, in good faith, a resolution of their differences; and,

3. Following the expiration of the time periods described in Subparagraph 2 above, if the U.S. EPA concurs with the position of the Respondents, the U.S. EPA shall so notify the Respondents and the IEPA in

writing and the parties shall modify this Consent Order pursuant to Article XXIX to include any necessary extensions of time or variances of work. If the U.S. EPA does not concur with the position of the Respondents, the U.S. EPA shall resolve the dispute, based upon and consistent with the terms and objectives of this Consent Order, and shall provide written notification of such resolution to the Respondents.

F. The pendency of dispute resolution set forth in this Article shall not affect the time period for completion of work and/or obligations to be performed under this Consent Order, except that upon mutual agreement of the U.S. EPA, in consultation with the IEPA, and the Respondents, any time period may be extended not to exceed the actual time taken to resolve the dispute. Elements of work and/or obligations not affected by the dispute shall be completed in accordance with the schedule contained in the RI/FS Work Plan.

G. Upon written resolution of any dispute, whether informally or using the procedures in this Article, any additions or modifications required as a result of such dispute resolution shall immediately be incorporated, if necessary, into the appropriate plan or procedure and into this Consent Order. The Respondents shall proceed with all remaining work according to the modified plan or procedure and this Consent Order.

H. In any administrative or judicial proceeding to enforce this Consent Order, the Respondents disputing U.S. EPA's position shall have the burden of proving that U.S. EPA's position is arbitrary and capricious or inconsistent with this Consent Order. The provisions regarding dispute resolution contained in this Consent Order shall supercede any other dispute resolution provisions which are potentially applicable to any of the parties, including any dispute resolution provisions contained in a Superfund Memorandum of Agreement between the State and the U.S. EPA.

XX. COMMUNITY RELATIONS

The Respondents shall cooperate with the U.S. EPA and the IEPA in providing RI/FS information to the public. To the extent requested by the U.S. EPA or the IEPA, the Respondents shall participate in the preparation of all appropriate information disseminated to the public and in public meetings which may be held or sponsored by the U.S. EPA or the IEPA to explain activities at or concerning the Facility, including the results of the RI/FS.

XXI. RECORD PRESERVATION

The Respondents shall preserve, during the pendency of this Consent Order, and for a minimum of ten (10) years after termination of this Consent Order, all records and documents in the possession of the Respondents, or in the possession of any

division, employees, agents, accountants, contractors, or attorneys of the Respondents, which relate in any way to the selection of remedial action at the Facility, whether or not prepared pursuant to this Consent Order and despite any document retention policy to the contrary. After this ten year period, the Respondents shall notify the U.S. EPA and the IEPA in writing within sixty (60) days prior to destruction or disposal of any such documents. Upon request of the U.S. EPA or the IEPA, the Respondents shall make available to the requester all or any such records, or copies of all or any such records, subject to Paragraph C of Article XV of this Consent Order (Sampling and Data/Document Availability).

XXII. WAIVER OF CLAIMS

A. The Respondents hereby waive any claims or demands for compensation or payment under Sections 106, 111 and 112 of CERCLA against the United States or the Hazardous Substances Superfund established by Section 9507 of Title 26 of the United States Code for or arising out of any activity performed or expenses incurred pursuant to this Consent Order.

B. This Consent Order does not constitute, and shall not be construed to constitute, approval or certification of response costs for purposes of Section 111(a)(2) of CERCLA.

XXIII. RESERVATION OF RIGHTS

A. The U.S. EPA and the IEPA reserve all rights and defenses that they may have individually or collectively pursuant to any available legal authority, except as expressly waived herein.

B. Nothing herein shall waive the right of the U.S. EPA or the IEPA to enforce this Consent Order, or the right of U.S. EPA to take action pursuant to Sections 104, 106(a) and 107 of CERCLA or any other available legal authority. The U.S. EPA and the IEPA also reserve the right to take any enforcement action pursuant to CERCLA and/or any other available legal authority, including the right to seek injunctive relief, monetary penalties, and punitive damages. In addition, the U.S. EPA reserves the right to undertake any RI/FS work, and/or any removal, remedial and/or response actions relating to the Facility, and to seek recovery from the Respondents for any and all costs incurred in undertaking such actions.

C. Nothing herein is intended to release, discharge, or in any way affect any claims, causes of action or demands in law or equity which the parties may have against any person, firm, partnership or corporation not a party to this Consent Order for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, release or disposal of any materials, hazardous substances, hazardous wastes, contaminants, or pollutants at, to, or from the Facility. The parties to this Consent Order expressly

reserve all rights, claims, demands, and causes of action they may have against any and all other persons and entities who are not parties to this Consent Order, and as to each other for matters not covered hereby.

D. The U.S. EPA and the IEPA recognize that the Respondents may have the right to seek contribution, indemnity and/or any other available remedy against any person not a party to this Consent Order found to be responsible or liable for contributions, indemnity or otherwise for any amounts which have been or will be expended by the Respondents in connection with the Facility.

E. Nothing herein shall be construed to release the Respondents from any liability for failure of the Respondents to perform the RI/FS in accordance with this Consent Order and the RI/FS Work Plan attached hereto and incorporated herein. The parties further expressly recognize that this Consent Order and the successful completion and approval of the RI/FS do not represent satisfaction, waiver, release, or covenant not to sue, of any claim of the United States or the State of Illinois against the Respondents relating to the Facility, including, but not limited to, claims to require Respondents to undertake further response actions, claims to seek reimbursement of response costs pursuant to Section 107 of CERCLA and claims for damages to natural resources under Section 107 of CERCLA, except that, upon receipt of written notice of satisfaction as provided in Article XXX (Termination and Satisfaction) of this Consent

Order, Respondents shall have no further obligations under this Consent Order other than record preservation under Article XXI.

F. Nothing herein is intended to be a release or settlement of any claim for personal injury or property damage by any person not a party to this Consent Order against the Respondents.

XXIV. REIMBURSEMENT OF COSTS

A. The U.S. EPA and the IEPA will individually provide the Respondents with a summary of all past response costs (a computer-generated report known as an annotated SPUR from the U.S. EPA), including, but not limited to, all indirect costs, incurred by each prior to the effective date of this Consent Order. Within thirty (30) days of receipt of any such summary, the Respondents shall pay to each requestor the total sum of that requestor's response costs incurred prior to the effective date of this Consent Order, including any interest which may have accrued thereon since the demand for costs contained in the May 30, 1990 special notice letter at the rate specified for the Hazardous Substances Superfund in Section 107(a) of CERCLA.

B. At the end of each twelve (12) month period beginning with the effective date of this Consent Order, the U.S. EPA and the IEPA will individually provide the Respondents with a summary of all oversight costs (an annotated SPUR from the U.S. EPA), including, but not limited to, all indirect costs, incurred by each with respect to this Consent Order during such twelve month

period including, but not limited to, the costs incurred by the U.S. EPA in having a qualified person oversee the conduct of this RI/FS pursuant to Section 104(a) of CERCLA. Within thirty (30) days of receipt of any such summary, the Respondents shall pay to each requestor the total sum of that requestor's oversight costs incurred during such twelve month period. Failure of the U.S. EPA or the IEPA to submit any such summary within the period specified shall not waive the Respondents' liability for any such oversight costs.

C. Payment to the U.S. EPA for response and oversight costs incurred by the U.S. EPA shall be made by certified or cashier's check or money order payable to the order of the Hazardous Substances Superfund and referencing the Facility name and state as well as the following identification number: FA05F9J13. Such payment shall be remitted to:

U.S. Environmental Protection Agency, Region V
Superfund Accounting
P.O. Box 70753
Chicago, Illinois 60673

Copies of the transmittal letter and check for each payment to the U.S. EPA shall be provided at the time of such payment to the U.S. EPA Project Coordinator and to: U.S. EPA, Region V, Office of Regional Counsel, 5CS-TUB-3, 230 S. Dearborn Street, Chicago, IL 60604, attn: SWER Branch Secretary.

D. Payment to the IEPA for response and oversight costs incurred by the IEPA shall be paid by certified or cashiers check or money order made payable to the "Hazardous Waste Fund", and forwarded to: Illinois Environmental Protection Agency,

Agency, Fiscal Services Section, Accounts Receivable Unit, 2200 Churchill Road, P.O. Box 19271, Springfield, Illinois 62797-9276. Copies of the transmittal letter and check for each payment to the IEPA shall be sent to the IEPA Project Coordinator at the time of such payment.

E. Nothing in this Consent Order waives, or shall be construed to waive, the right of the United States or the State of Illinois to bring an action against the Respondents for recovery of any future costs incurred by the United States or the State of Illinois in connection with any response activities conducted or to be conducted at the Facility, other than those response activities completed pursuant to this Consent Order to the satisfaction and approval of the U.S. EPA in consultation with the IEPA.

F. The Respondents agree to limit any disputes concerning costs to accounting errors and the inclusion of costs outside the scope of this Consent Order. The Respondents shall pay a sum equivalent to that of the disputed costs into an escrow account pending the resolution of the dispute. In any judicial or administrative proceedings concerning disputed costs, the Respondents shall bear the burden of establishing that costs assessed by the United States or the State of Illinois are attributable to an accounting error or include costs outside the scope of this Consent Order. Interest shall begin to accrue on the unpaid balance of disputed costs found to be payable on the day following the date the payment was originally due. Pursuant

to 31 U.S.C. § 3717, interest shall accrue on any amounts overdue at a rate established by the Department of Treasury for any period after the date of billing.

XXV. INDEMNIFICATION OF THE UNITED STATES AND THE STATE OF ILLINOIS

A. The Respondents agree to indemnify and save and hold the United States Government, the State of Illinois and their officers, agencies, departments, agents, and employees, harmless from any and all claims or causes of action arising from, or on account of, acts or omissions of the Respondents, its officers, employees, receivers, trustees, agents, or assigns, in carrying out the activities pursuant to this Consent Order.

B. Neither the U.S. EPA nor the IEPA is a party to any contract involving the Respondents at the Facility.

XXVI. NOTIFICATION OF OUT-OF-STATE SHIPMENTS

As soon as possible after the identification of any location outside the State in which the Facility is located and to which a shipment of hazardous substances of greater than ten (10) cubic yards from the Facility is expected to be made and, in all cases, prior to any such shipment, the Respondents shall provide written notification of such shipment to the appropriate environmental official of the State receiving the substances and to the U.S. EPA and the IEPA Project Coordinators. The notification shall include, at a minimum: 1) the name and location of the facility to which the hazardous substances are being shipped; 2) the type

and quantity of the hazardous substances being shipped, including the Department of Transportation shipping code, if any; 3) the schedule for shipment of the hazardous substances; 4) the method of transportation; and 5) any other relevant information, including any special procedures necessary to respond to an accidental release of the substances during transportation. The Respondents shall promptly notify the official of the receiving State and the U.S. EPA and the IEPA Project Coordinators in writing of any changes to the shipment plan.

XXVII. FINANCIAL ASSURANCE AND LIABILITY INSURANCE

A. The Respondents shall establish and maintain a financial instrument or trust account or other financial mechanism acceptable to the U.S. EPA funded sufficiently to perform the work and any other obligations required under this Consent Order, including a margin for cost overruns. Within fifteen (15) days after the effective date of this Consent Order, the Respondents shall fund the financial instrument or trust account sufficiently to perform the work and other obligations required under this Consent Order projected for the period ending on the last day of the calendar-year quarter in which falls the date six month after the effective date of this Consent Order. On or before the fifteenth (15th) day of each calendar-year quarter beginning with and including the calendar-year quarter in which falls the date six months after the effective date of this Consent Order, the Respondents shall fund the financial instrument or trust account sufficiently to perform the work and other obligations required

under this Consent Order projected for the succeeding calendar-year quarter.

B. If at any time the net worth of the financial instrument or trust account is insufficient to cover the costs of performing the work and other obligations under this Consent Order for the succeeding quarter, the Respondents shall provide written notice to the U.S. EPA and the IEPA within seven (7) days after such time, explaining why the funding is insufficient how the Respondents will restore adequate funding.

C. Prior to the commencement of any work under this Consent Order, the Respondents shall ensure that the contractor or subcontractor performing such work maintains Comprehensive General Liability insurance in the amount of at least $2 million dollars per occurrence with an annual aggregate of at least $4 million. At least seven (7) days prior to the commencement of any work under this Consent Order, the Respondents shall certify to the U.S. EPA and the IEPA that the required insurance has been obtained by the contractor or subcontractor performing that work. The Respondents shall provide the U.S. EPA and the IEPA with current copies of each insurance policy throughout the duration of the work performed under this Consent Order.

XXVIII. EFFECTIVE DATE OF CONSENT ORDER

This Consent Order shall become effective upon the date of signature by the Director of the Waste Management Division, U.S. EPA, Region V.

XXIX. MODIFICATION OF CONSENT ORDER

In addition to the procedures set forth in Articles XI (Additional Work), XIV (Project Coordinators), XVII (Timeliness of Performance), and XIX (Dispute Resolution) of this Consent Order, this Consent Order may be modified by mutual agreement of the U.S. EPA, the IEPA, and the Respondents. Any modification of this Consent Order shall be in writing, signed by the U.S. EPA and the IEPA, and shall have as the effective date that date on which such amendment is signed by the U.S. EPA. The U.S. EPA Project Coordinator does not have the authority to modify this Consent Order or to sign modifications to this Consent Order.

XXX. TERMINATION AND SATISFACTION

A. The provisions of this Consent Order shall be deemed satisfied upon receipt by the Respondents of written notice from the U.S. EPA that the Respondents have demonstrated that all of the terms of this Consent Order, including any additional work, modifications or amendments but excluding record preservation pursuant to Article XXI, have been completed in accordance with the terms hereof to the satisfaction of the U.S. EPA in consultation with the IEPA.

XXXI. PRECEDENCE OF CONSENT ORDER

In the event that a conflict arises among the terms and conditions of this Consent Order and those of the Statement of Work, the Approved RI Work Plan and/or the approved FS Work

Plan, this Consent Order shall govern and the terms and conditions hereunder shall determine the parties' rights and responsibilities.

IT IS SO AGREED:

BY: _____ _____
OUTBOARD MARINE CORP. Date

_____ _____
GENERAL MOTORS CORP. Date

_____ _____
NORTH SHORE GAS CO. Date

IT IS SO ORDERED AND AGREED:

BY: _____ _____
Bernard Killian Date
Illnois Environmental Protection
Agency

BY: _____ _____
David Ullrich Date
Acting Director
Waste Management Division
Region V
U.S. Environmental Protection Agency

STATEMENT OF WORK FOR CONDUCTING A REMEDIAL INVESTIGATION AND FEASIBILITY STUDY AT THE WAUKEGAN COKE PLANT WAUKEGAN, ILLINOIS

INTRODUCTION

The purpose of this remedial investigation/feasibility study (RI/FS) is to investigate the nature and extent of contamination at the Waukegan Coke Plant (WCP) Site located in Waukegan, Illinois, to assess the potential risk to human health and the environment, and to develop and evaluate potential remedial alternatives. The RI and FS are interactive and may be conducted concurrently so that the data collected in the RI influences the development of remedial alternatives in the FS, which in turn affects the data needs and the scope of treatability studies.

The respondents will conduct this RI/FS and will produce a draft RI and FS report that are in accordance with this statement of work, and the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (U.S. EPA, Office of Emergency and Remedial Response, October 1988), and any other guidances that EPA uses in conducting a RI/FS, as well as any additional requirements in the administrative order. The RI/FS Guidance describes the report format and the required report content. The respondents will furnish all necessary personnel, materials, and services needed, or incidental to, performing the RI/FS, except as otherwise specified in the administrative order.

At the completion of the RI/FS, EPA will be responsible for the selection of a site remedy and will document this selection in the Record of Decision (ROD). The remedial action alternative selected by EPA will meet the cleanup standards specified in CERCLA Section 121. That is, the selected remedial action will be protective of human health and the environment, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements of other laws, will be cost-effective, will utilize permanent solutions and alternative treatment technologies or resource recovery technologies, to the maximum extent practicable, and will address the statutory preference for treatment as a principal element. The final RI/FS report, as adopted by EPA, will, with the administrative record, form the basis for the selection of the site's remedy and will provide the information necessary to support the development of the ROD.

As specified in CERCLA Section 104(a)(1), as amended by SARA, EPA will provide oversight of the respondent's activities throughout the RI/FS. The respondents will support EPA's initiation and conduct of activities related to the implementation of oversight activities.

TASK 1 - SCOPING

When scoping the specific aspects of a project, the respondents must meet with EPA to discuss all project planning decisions and special concerns associated with the site. The following activities shall be performed by the respondents as a function of the project planning process.

The respondents will document the specific project objectives in a work

plan. Because the work required to perform a RI/FS if not fully known at the onset, and is phased in accordance with a site's complexity and the amount of available information, it may be necessary to modify the work plan during the RI/FS to satisfy the objectives of the study.

A. Site Background

The respondents will gather and analyze the existing site background information and will conduct a site visit to assist in planning the scope of the RI/FS. The site background information will be summarized into a technical memorandum. The site background information is intended to provide the respondents, U.S. EPA and Illinois EPA (IEPA) a common understanding of the site for purposes of developing the site conceptual model.

1. Collect and analyze existing data and document the need for additional data

Before planning RI/FS activities, all existing site data will be thoroughly compiled and reviewed by the respondents. Specifically, this will include presently available data relating to the varieties and quantities of hazardous substances at the site, and past operations and disposal practices. This will also include results from any previous sampling events and responses from 104(e) information requests. The respondents will refer to Table 2-1 of the RI/FS Guidance for a comprehensive list of data collection information sources. This information will be utilized in determining additional data needed to characterize the site, better define potential applicable or relevant and appropriate requirements (ARARs), and develop a range of preliminarily identified remedial alternatives during project planning.

2. Conduct Site Visit

The respondents will conduct a site visit during the project scoping phase to assist in developing a conceptual understanding of sources and areas of contamination as well as potential exposure pathways and receptors at the site. During the site visit the respondents should observe the site's physiography, hydrology, geology, and demographics, as well as natural resource, ecological and cultural features. This information will be utilized to better scope the project and to determine the extent of additional data necessary to characterize the site, better define potential ARARs, and narrow the range of preliminarily identified remedial alternatives.

B. Project Planning

Once the respondents has collected and analyzed existing data and conducted a site visit, the specific project scope will be planned. Project planning activities include those tasks described below as well as identifying data needs, developing a work plan, designing a data collection program, and identifying health and safety protocols. The respondents will meet with EPA regarding the following activities and before drafting of the scoping

deliverables below. These tasks are described in Section C. of this task since they result in the development of specific required deliverables.

1. Refine and document preliminary remedial action objectives and alternatives

   Once existing site information has been analyzed and a conceptual understanding of the potential site risks is reached, the respondents will identify a preliminary range of broadly defined potential remedial action alternatives and associated technologies. The range of potential alternatives should encompass where appropriate, alternatives in which treatment significantly reduces the toxicity, mobility, or volume of the waste; alternatives that involve containment with little or no treatment; and a no-action alternative.

2. Document the need for treatability studies

   If remedial actions involving treatment have been identified by the respondents or EPA, treatability studies will be required except where the respondents can demonstrate to EPA's satisfaction that they are not needed. Where treatability studies are needed, initial treatability testing activities (such as research and study design) will be planned to occur concurrently with site characterization activities (see Tasks 3 and 5).

3. Begin preliminary identification of Potential ARARs

   The respondents will conduct a preliminary identification of potential state and federal ARARs (chemical-specific, location-specific, and action-specific) to assist in the refinement of remedial action objectives, and the initial identification of remedial alternatives and ARARs associated with particular actions. ARAR identification will continue as site conditions, contaminants, and remedial action alternatives are better defined.

C. Scoping Deliverables

At the conclusion of the project planning phase, the respondents will submit a RI/FS work plan, a sampling and analysis plan, and a site health and safety plan. The RI/FS work plan and sampling and analysis plan must be reviewed and approved by EPA prior to the initiation of field activities.

1. RI/FS Work Plan

   A work plan documenting the decisions and evaluations completed during the scoping process will be submitted to EPA for review and approval. The work plan should be developed in conjunction with the sampling and analysis plan and the site health and safety plan, although each plan may be delivered under separate cover. The work plan will include a comprehensive description of the work to be performed, including the methodologies to be utilized, as well as a

corresponding schedule for completion. In addition, the work plan must include the rationale for performing the required activities.

Specifically, the work plan will present a statement of the problem(s) and potential problem(s) posed by the site and the objectives of the RI/FS. Furthermore, the plan will include a site background summary setting forth the site description including the geographic location of the site, and to the extent possible, a description of the site's physiography, hydrology, geology, demographics, ecological, cultural and natural resource features; a synopsis of the site history and a description of previous responses that have been conducted at the site by local, state, federal, or private parties; a summary of the existing data in terms of physical and chemical characteristics of the contaminants identified, and their distribution among the environmental media at the site. The plan will also include a conceptual "model" describing the contaminant sources, and potential migration and exposure pathways and receptors. In addition, the plan will include a description of the site management strategy developed by EPA during scoping; a preliminary identification of remedial alternatives and data needs for evaluation of remedial alternatives. The plan will reflect coordination with treatability study requirements (see Tasks 1 and 5). It will include a process for and manner of identifying Federal and state ARARs (chemical-specific, location-specific, and action-specific).

Finally, the major part of the work plan is a detailed description of the tasks to be performed, information needed for each task (e.g., for health and environmental risk evaluation), information to be produced during and at the conclusion of each task, and a description of the work products that will be submitted to EPA. This includes the deliverables set forth in the remainder of this statement of work; a schedule for each of the required activities which is consistent with the RI/FS guidance; and a project management plan, including a data management plan (e.g., requirements for project management systems and software, minimum data requirements, data format and backup data management), monthly reports to EPA and meetings and presentations to EPA at the conclusion of each major phase of the RI/FS. The respondents will refer to Appendix B of the RI/FS Guidance for a comprehensive description of the contents of the required work plan.

Because of the unknown nature of the site and iterative nature of the RI/FS, additional data requirements and analyses may be identified throughout the process. The respondents will submit a technical memorandum documenting the need for additional data, and identifying the DQOs whenever such requirements are identified. In any event, the respondents is responsible for fulfilling additional data and analysis needs identified by EPA consistent with the general scope and objectives of this RI/FS.

2. Sampling and Analysis Plan

The respondents will prepare a sampling and analysis plan (SAP) to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data meet Data Quality Objectives (DQOs). The SAP provides a mechanism for planning field activities and consists of a field sampling plan (FSP) and a quality assurance project plan (QAPP).

The FSP will define in detail the sampling and data-gathering methods that will be used on the project. It will include sampling objectives, sample location and frequency, sampling equipment and procedures, and sample handling and analysis. The QAPP will describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols that will be used to achieve the desired DQOs. The DQOs will at a minimum reflect use of analytical methods to identify contamination and remediating contamination consistent with the levels for remedial action objectives. In addition, the QAPP will address sampling procedures, sample custody, analytical procedures, and data reduction, validation, reporting and personnel qualifications. Field personnel should be available for EPA QA/QC training and orientation where applicable.

The respondents will demonstrate, in advance to EPA's satisfaction, that each laboratory it may use is qualified to conduct the proposed work. This includes use of methods and analytical protocols for the chemicals of concern in the media of interest within detection and quantification limits consistent with both QA/QC procedures and DQOs approved in the QAPP for the site by EPA. The laboratory must have and follow an approved QA program. If the laboratory is not in the CLP program, a laboratory QA program must be submitted for EPA review and approval. EPA may require that the respondents submit detailed information to demonstrate that the laboratory is qualified to conduct the work, including information on personnel qualifications, instrument and material specifications. The respondents will provide assurances that EPA has access to laboratory personnel, equipment and records for sample collection, transportation and analysis.

3. Site Health and Safety Plan

A health and safety plan will be prepared in conformance with the respondent's health and safety program, and in compliance with OSHA regulations and protocols. The health and safety plan will include the 11 elements described in the RI/FS Guidance, such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and site control.

TASK 2 - COMMUNITY RELATIONS

The development and implementation of community relations activities are the responsibility of EPA. The critical community relations planning steps performed by EPA include conducting community interviews and developing a community relations plan. Although implementation of the community relations plan is the responsibility of EPA, the respondents may assist by providing information regarding the site's history and participating in public meetings. The respondents' community relations responsibilities, if any, are specified in the community relations plan. All PRP-conducted community relations activities will be subject to oversight by EPA.

TASK 3 - SITE CHARACTERIZATION

As part of the RI, the respondents will perform the activities described in this task, including the preparation of a site characterization summary and a RI report. The overall objective of site characterization is to describe areas of a site that may pose a threat to human health or the environment. This is accomplished by first determining a site's physiography, geology, and hydrology. Surface and subsurface pathways of migration will be defined. The respondents will identify the sources of contamination and define the nature, extent, and volume of the sources of contamination, including their physical and chemical constituents as well as their concentrations at incremental locations to the background in the affected media. The respondents will also investigate the extent of migration of this contamination as well as its volume and any changes in its physical or chemical characteristics, to provide for a comprehensive understanding of the nature and extent of contamination at the site. Using this information, contaminant fate and transport is then determined and projected.

During this phase of the RI/FS, the work plan, SAP, and health and safety plan are implemented. Field data are collected and analyzed to provide the information required to accomplish the objectives of the study. The respondents will notify EPA at least two weeks in advance of the field work regarding the planned dates for field activities, including field lay out of the sampling grid, excavation, installation of wells, initiating sampling, installation and calibration of equipment, pump tests, and initiation of analysis and other field investigation activities. The respondents will demonstrate that the laboratory and type of laboratory analyses that will be utilized during site characterization meets the specific QA/QC requirements and the DQOs of the site investigation as specified in the SAP. In view of the unknown site conditions, activities are often iterative, and to satisfy the objectives of the RI/FS it may be necessary for the respondents to supplement the work specified in the initial work plan. In addition to the deliverables below, the respondents will provide a monthly progress report and participate in meetings at major points in the RI/FS.

A. Field Investigations

The field investigation includes the gathering of data to define site physical characteristics, sources of contamination, and the nature and extent of contamination at the site. These activities will be performed by the respondents in accordance with the work plan and SAP. At a minimum, this

shall address the following:

1. Implement and document field support activities

The respondents will initiate field support activities following approval of the work plan and SAP. Field support activities may include obtaining access to the site, scheduling, and procuring equipment, office space, laboratory services, and/or contractors. The respondents will notify EPA at least two weeks prior to initiating field support activities so that EPA may adequately schedule oversight tasks. The respondents will also notify EPA in writing upon completion of field support activities.

2. Investigative and define site physical characteristics

The respondents will collect data on the physical characteristics of the site and its surrounding areas including the physiography, geology, and hydrology, and specific physical characteristics identified in the work plan. The information will be ascertained through a combination of physical measurements, observations, and sampling efforts and will be utilized to define potential transport pathways and receptor populations. In defining the site's physical characteristics the respondents will also obtain sufficient engineering data (such as pumping characteristics) for the projection of contaminant fate and transport, and development and screening of remedial action alternatives, including information to assess treatment technologies.

3. Define sources of contamination

The respondents will locate each source of contamination. For each location, the areal extent and depth of contamination will be determined by sampling at incremental depths on a sampling grid. The physical characteristics and chemical constituents and their concentrations will be determined for all known and discovered sources of contamination. The respondents shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the QA/QC plan and DQOs. Defining the source of contamination will include analyzing the potential for contaminant release (e.g., long term leaching from soil), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information to assess treatment technologies.

4. Describe the nature and extent of contamination

The respondents will gather information to describe the nature and extent of contamination as a final step during the field investigation. To describe the nature and extent of contamination, the respondents will utilize the information on site physical characteristics and sources of contamination to give a preliminary estimate of the contaminants that may have migrated. The

respondents will then implement an iterative monitoring program and any study program identified in the work plan or SAP such that by using analytical techniques sufficient to detect and quantify the concentration of contaminants, the migration of contaminants through the various media at the site can be determined. In addition, the respondents will gather data for calculations of contaminant fate and transport. This process is continued until the area and depth of contamination are known to the level of contamination established in the QA/QC plan and DQOs. Information on the nature and extent of contamination will be utilized to determine the level of risk presented by the site and will help to determine aspects of the appropriate remedial action alternatives to be evaluated.

B. Data Analyses

Evaluate site characteristics

The respondents will analyze and evaluate the data to describe: (1) site physical characteristics, (2) contaminant source characteristics, (3) nature and extent of contamination, and (4) contaminant fate and transport. Results of the site physical characteristics, source characteristics, and extent of contamination analyses are utilized in the analysis of contaminant fate and transport. The evaluation will include the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as mobility and persistence of contaminants. Where modeling is appropriate, such models shall be identified to EPA in a technical memorandum prior to their use. All data and programming, including any proprietary programs, shall be made available to EPA together with a sensitivity analysis. Also, this evaluation shall provide any information relevant to site characteristics necessary for evaluation of the need for remedial action in the risk assessment and for the development and evaluation of remedial alternatives. Analyses if data collected for site characterization will meet the DQOs developed in the QA/QC plan stated in the SAP (or revised during the RI).

C. Data Management Procedures

The respondents will consistently document the quality and validity of field and laboratory data compiled during the RI.

1. Document field activities

Information gathered during site characterization will be consistently documented and adequately recorded by the respondents in well maintained field logs and laboratory reports. The method(s) of documentation must be specified in the work plan and/or the QAPP. Field logs must be utilized to document observations, measurements, and significant events that have occurred during field activities. Laboratory reports must document sample custody, analytical responsibility, analytical results, adherence to prescribed

protocols, nonconformity events, corrective measures, and/or data deficiencies.

2. Maintain sample management and tracking

The respondents will maintain field report, sample shipment records, analytical results, QA/QC reports to ensure that only validated analytical data are reported and utilized in the development and evaluation of remedial alternatives. Analytical results developed under the work plan will not be included in any site characterization reports unless accompanied by or cross-referenced to a corresponding QA/QC report. In addition, the respondents will establish a data security system to safeguard chain-of-custody forms and other project records to prevent loss, damage, or alteration of project documentation. These data management procedures will also be discussed in the QAPP.

D. Site Characterization Deliverables

The respondents will prepare the preliminary site characterization summary and, once the baseline risk assessment (Task 4) is complete, the remedial investigation report.

1. Preliminary Site Characterization Summary

After completing field sampling and analysis, the respondents will prepare a concise site characterization summary. This summary will review the investigative activities that have taken place, and describe and display site data documenting the location and characteristics of surface and subsurface features and contamination at the site including the affected medium, location, types, physical state, concentration of contaminants and quantity. In addition, the location, dimensions, physical condition and varying concentrations of each contaminant throughout each source and the extent of contaminant migration through each of the affected media will be documented. The site characterization summary will provide EPA with a preliminary reference for developing the risk assessment, and evaluating the development and screening of remedial alternatives and the refinement and identification of ARARs.

2. Remedial Investigation (RI) Report

The respondents will prepare and submit a draft RI report to EPA for review and approval after completion of the baseline risk assessment (see Task 4). This report shall summarize results of field activities to characterize the site, sources of contamination, nature and extent of contamination, the fate and transport of contaminants, and results of the baseline risk assessment. The respondents will refer to the RI/FS Guidance for an outline of the report format and contents. Following comment by EPA, the respondents will prepare a final RI report which incorporates EPA's comments.

TASK 4 - BASELINE RISK ASSESSMENT

A baseline risk assessment will identify and characterize the toxicity and levels of hazardous substances present, contaminant fate and transport, the potential for human or environmental exposure, or both, and the risk of potential impacts or threats on human health and the environment. It will provide the basis for determining whether or not remedial action is necessary, and a justification for performing remedial actions. The procedures to perform a baseline risk assessment for human health are outlined in EPA's Risk Assessment Guidance for Superfund (RAGS). These procedures are outlined below and must be followed by the respondents. Other resources that the respondents must utilize when performing the baseline risk assessment include: the Human Health Evaluation Manual, the Environmental Evaluation Manual, the Superfund Exposure Assessment Manual (SEAM), the Integrated Risk Information System (IRIS), and the Public Health Evaluation Database (PHRED).

A. Human Health and Risk Assessment Components

The risk assessment process is divided into the four components listed below. Prior to beginning the risk assessment, the respondents will discuss with EPA the format of the risk assessment report as well as the references to be utilized during the baseline risk assessment.

1. Contaminant identification and documentation

The respondents will review the information that is available on the hazardous substances present at the site and will identify the contaminants of concern. The indicator chemicals, or contaminants of concern, are not chosen solely on the basis of chemical-specific ARARs. Rather, they are selected based on quantity, the concentration of contaminants on site as compared to levels that pose a risk, or critical exposure pathways, such as drinking water. When selecting the indicator chemicals, the respondents must also consider the additive effect of risks. The respondents shall submit to EPA for review and approval a technical memorandum listing the hazardous substances present at the site and the indicator chemicals with the known corresponding ambient concentrations of these contaminants. Chemical-specific ARARs should also be identified at this time.

2. Exposure assessment and documentation

Using the information in the SEAM, the respondents will identify actual and potential exposure points and pathways. Exposure assumptions must be supported with validated data and must be consistent with Agency policy. Validation of data that has not previously undergone Agency review may be performed as long as it does not delay the RI/FS schedule. For each exposure point, the release source, the transport media (e.g., ground water, surface water, air) and the exposure route (oral, inhalation, dermal) must be clearly delineated. The current number of people at each

exposure point must be estimated and both sensitive and potentially exposed populations must be characterized. Both present and future risks at the site must be considered, and both current and maximum reasonable use scenarios must be considered. The respondents will submit to EPA for review and approval a technical memorandum describing the exposure scenarios with a description of the assumptions made and the use of data. In addition, the respondents will submit to EPA for review and approval a description of the fate and transport models that will be utilized, including a summary of the data that will be used with these models. Representative data must be utilized and the limitations and uncertainties with the models must be documented.

3. Toxicity assessment and documentation

The respondents will utilize the information in IRIS to provide a toxicity assessment of the indicator chemicals. This assessment will include the types of adverse health and/or environmental effects associated with chemical exposures (including potential carcinogenicity), the relationship between magnitude of exposures and adverse effects, and the related uncertainties for contaminant toxicity (e.g., the weight of evidence for a chemical's carcinogenicity). For those substances lacking an EPA toxicity value for which the respondents wishes to develop its own toxicity value, the respondents will submit to EPA for review and approval a technical memorandum listing the toxicological and epidemiological studies that will be utilized to perform the toxicity assessment. All data utilized in the toxicity assessment must be validated and the validated data accepted by EPA. Validation of data that has not previously undergone Agency review may be performed as long as it does not delay the RI/FS schedule.

4. Risk characterization

The respondents will integrate the ambient concentrations and reasonable worst case assumptions with the information developed during the exposure and toxicity assessments, to characterize the current and potential risk to human health and the environment posed by the site. This risk characterization must identify any uncertainties associated with contaminants, toxicities, and/or exposure assumptions.

B. Baseline Risk Assessment Deliverables

The respondents is required to prepare the technical memoranda listed in Item a of Task 4 of this SOW. The final risk assessment report is submitted at the completion of site characterization with the draft RI report (see Task 3).

1. Baseline Risk Assessment Chapter of the RI Report

The baseline risk assessment report will be submitted to EPA for review and approval. The report will include a comprehensive description of the four components of the risk assessment and will follow the principles established in the SPHEM. A discussion of sources of uncertainty, data gaps, incomplete toxicity information, and modeling characteristics must be included. The respondents will refer to the RAGS for an outline of the report format.

C. Environmental Evaluation and Deliverables

In addition to the human health risk assessment, the risks to the environment from exposure to the contaminants must be addressed.

1. Environmental Evaluation Plan

The respondents will submit for EPA's review and approval a plan for the evaluation of the environmental risk. This plan must specify the objectives of the evaluation and the information necessary to adequately characterize the nature and extent of environmental risk or threat resulting from the site. At a minimum, this plan must demonstrate how the environmental evaluation will address: (1) any critical habitats affected by site contamination; and (2) any endangered species or habitats of endangered species affected by the contamination. The respondents will utilize the Interim Final Risk Assessment Guidance for Superfund - Environmental Evaluation Manual.

2. Environmental Evaluation Report

The environmental evaluation report will be submitted to EPA for review and approval. This evaluation may be included in the baseline risk assessment report or as a document separate from the human health risk assessment. At a minimum, the environmental evaluation report will include an assessment of any critical habitats, and any endangered species or habitats of endangered species affected by contamination at the site.

TASK 5 - TREATABILITY STUDIES

Treatability testing will be performed by the respondents to assist in the detailed analysis of alternatives. In addition, if applicable, testing results and operating conditions will be used in the detailed design of the selected remedial technology. The following activities will be performed by the respondents.

A. Determination of Candidate Technologies and of the Need for Testing

The respondents will identify in a technical memorandum, subject to EPA review and approval, candidate technologies for a treatability studies program during project planning (Task 1). The listing of candidate technologies will cover the range of technologies required for alternatives analysis (Task 6 a). The specific data requirements for the testing program will be determined and refined during site characterization and the development and screening of

remedial alternatives (Task 2 and 6, respectively).

1. Conduct literature survey and determine the need for treatability testing

The respondents will conduct a literature survey to gather information on performance, relative costs, applicability, removal efficiencies, operation and maintenance (O&M) requirements, and implementability of candidate technologies. If practical candidate technologies have not been sufficiently demonstrated, or cannot be adequately evaluated for this site on the basis of available information, treatability testing will be conducted. Where it is determined by EPA that treatability testing is required, and unless the respondents can demonstrate to EPA's satisfaction that they are not needed, the respondents will submit a statement of work to EPA outlining the steps and data necessary to evaluate and initiate the treatability testing program.

2. Evaluate treatability studies

Once a decision has been made to perform treatability studies, the respondents and EPA will decide on the type of treatability testing to use (e.g., bench versus pilot). Because of the time required to design, fabricate, and install pilot scale equipment as well as perform testing for various operating conditions, the decision to perform pilot testing should be made as early in the process as possible to minimize potential delays of the FS. To assure that a treatability testing program is completed on time, and with accurate results, the respondents will either submit a separate treatability testing work plan or an amendment to the original site work plan for EPA review and approval.

B. Treatability Testing and Deliverables

The deliverables that are required, in addition to the memorandum identifying candidate technologies, where treatability testing is conducted include a work plan, a sampling and analysis plan, and a final treatability evaluation report. EPA may also require a treatability study health and safety plan, where appropriate.

1. Treatability testing work plan

The respondents will prepare a treatability testing work plan or amendment to the original site work plan for EPA review and approval describing the site background, remedial technology(ies) to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, and residual waste management. The DQOs for treatability testing should be documented as well. If pilot-scale treatability testing is to be performed, the pilot-scale work plan will describe pilot plant installation and start-up, pilot plant operation and maintenance

procedures, operating conditions to be tested, a sampling plan to determine pilot plant performance, and a detailed health and safety plan. If testing is to be performed off-site, permitting requirements will be addressed.

2. Treatability study SAP

If the original QAPP or FSP is not adequate for defining the activities to be performed during the treatability tests, a separate treatability study SAP or amendment to the original site SAP will be prepared by the respondents for EPA review and approval. Task 1, Item c. of this statement of work provides additional information on the requirements of the SAP.

3. Treatability study health and safety plan

If the original health and safety plan is not adequate for defining the activities to be performed during the treatment tests, a separate or amended health and safety plan will be developed by the respondents. Task 1, Item c. of this statement of work provides additional information on the requirements of the health and safety plan.

4. Treatability study evaluation report

Following completion of treatability testing, the respondents will analyze and interpret the testing results in a technical report to EPA. Depending on the sequence of activities, this report may be a part of the RI/FS report or a separate deliverable. The report will evaluate each technology's effectiveness, implementability, cost and actual results as compared with predicted results. The report will also evaluate full-scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

TASK 6 - DEVELOPMENT AND SCREENING OF REMEDIAL ALTERNATIVES

The development and screening of remedial alternatives is performed to develop an appropriate range of waste management options that will be evaluated. This range of alternatives should include, as appropriate, options in which treatment is used to reduce the toxicity, mobility, or volume of wastes, but varying in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; options involving containment with little or no treatment; options involving both treatment and containment; and a no-action alternative. The following activities will be performed by the respondents as a function of the development and screening of remedial alternatives.

A. Development and Screening of Remedial Alternatives

The respondents will begin to develop and evaluate a range of appropriate waste management options that at a minimum ensure protection of human health and the environment, concurrent with the RI site characterization task.

1. Refine and document remedial action objectives

   The respondents will review and if necessary propose refinement to the site-specific remedial action objectives that were established during the project planning stage. The revised remedial action objectives will be documented in a technical memorandum. These objectives will specify the contaminants and media of interest, exposure pathways and receptors, and an acceptable contaminant level or range of levels (at particular locations for each exposure route).

2. Develop general response actions

   The respondents will develop general response actions for each medium of interest defining containment, treatment, excavation, pumping, or other actions, singly or in combination, to satisfy the remedial action objectives.

3. Identify areas or volumes of media

   The respondents will identify areas or volumes of media to which general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. The chemical and physical characterization of the site will also be taken into account.

4. Identify, screen, and document remedial technologies

   The respondents will identify and evaluate technologies applicable to each general response action to eliminate those that cannot be implemented at the site. General response actions will be refined to specify remedial technology types. Technology process options for each of the technology types will be identified either concurrent with the identification of technology types, or following the screening of the considered technology types. Process options will be evaluated on the basis of effectiveness, implementability, and cost factors to select and retain one or, if necessary, more representative process for each technology type. The technology types and process options will be summarized for inclusion in a technical memorandum. The reasons for eliminating alternatives must be specified.

5. Assemble and document alternatives

   The respondents will assemble selected representative technologies into alternatives for each affected medium or operable unit. Together, all of the alternatives will represent a range of treatment or containment combinations that will address either the

site or the operable unit as a whole. A summary of the assembled alternatives and their related action-specific ARARs will be prepared by the respondents for inclusion in a technical memorandum. The reasons for eliminating alternatives during the preliminary screening must be specified.

6. Refine alternatives

The respondents will refine the remedial alternatives to identify contaminant volume addressed by the proposed process and sizing of critical unit operations as necessary. Sufficient information will be collected for an adequate comparison of alternatives. Remedial action objectives for each medium will also be refined as necessary to incorporate any new risk assessment information being generated from the remedial investigation. Additionally, action-specific ARARs will be updated as the remedial alternatives are refined.

7. Conduct and document screening evaluation of each alternative

The respondents may perform a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for detailed analysis. If necessary, the screening of alternatives will be conducted to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis.

As appropriate, the screening will preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives will include options that use treatment technologies and permanent solutions to the maximum extent practicable. The respondents will prepare a technical memorandum summarizing the results and reasoning employed in screening, arraying alternatives that remain after screening, and identifying the action-specific ARARs for the alternatives that remain after screening.

B. Remedial Alternatives Array Document

The respondents will prepare a technical memorandum summarizing the work performed in and the results of each task above, including an alternatives array summary. These will be modified by the respondents if required by EPA's comments to assure identification of a complete and appropriate range of viable alternatives to be considered in the detailed analysis. This deliverable will document the methods, rationale, and results of the alternatives screening process.

To obtain ARARs from IEPA, a detailed description of alternatives (including the extent of remediation, contaminant levels to be addressed, and method of treatment) will be prepared. This document will also include a brief site history and background, a site characterization that indicates the

contaminants of concern, migration pathways, receptors, and other pertinent site information. A copy of this Alternative Array Document will be submitted to the U.S. EPA and the IEPA along with the request for notification of the standards.

TASK 7 - DETAILED ANALYSIS OF REMEDIAL ALTERNATIVES

The detailed analysis will be conducted by the respondents to provide EPA with the information needed to allow for the selection of a site remedy. This analysis is the final task to be performed by the respondents during the FS.

A. Detailed Analysis of Alternatives

The respondents will conduct a detailed analysis of alternatives which will consist of an analysis of each option against a set of nine evaluation criteria and a comparative analysis of all options using the same evaluation criteria as a basis for comparison.

1. Apply nine criteria and document analysis

The respondents will apply nine evaluation criteria to the assembled remedial alternatives to ensure that the selected remedial alternative will be protective of human health and the environment; will be in compliance with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria include: (1) overall protection of human health and the environment; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) IEPA acceptance; and (9) community acceptance. (Note: criteria 8 and 9 are considered after the RI/FS report has been released to the general public.) For each alternative, the respondents should provide: (1) a description of the alternative that outlines the waste management strategy involved and identifies the key ARARs associated with each alternative, and (2) a discussion of the individual criterion assessment. If the respondents does not have direct input on criteria (8) IEPA acceptance and (9) community acceptance, these will be addressed by EPA.

2. Compare alternatives against each other and document the comparison of alternatives

The respondents will perform a comparative analysis between the remedial alternatives. That is, each alternative will be compared against the others using the evaluation criteria as a basis of comparison. Identification and selection of the preferred alternative are reserved by EPA. The respondents will prepare a technical memorandum summarizing the results of the comparative analysis.

B. Detailed Analysis Deliverables

In addition to the technical memorandum summarizing the results of the comparative analysis, the respondents will submit a draft FS report to EPA for review and approval. Once EPA's comments have been incorporated, the final FS report may be bound with the final RI report.

To obtain ARARs from IEPA, a detailed description of alternatives (including the extent of remediation, contaminant levels to be addressed, and method of treatment) will be prepared. This document will also include a brief site history and background, a site characterization that indicates the contaminants of concern, migration pathways, receptors, and other pertinent site information. A copy of this Alternative Array Document will be submitted to the U.S. EPA and the IEPA along with the request for a notification of the standards.

1. Feasibility study report

The respondents will prepare a draft FS report for EPA review and comment. This report, as ultimately adopted or amended by EPA, provides a basis for remedy selection by EPA and documents the development and analysis of remedial alternatives. The respondents will refer to the RI/FS Guidance for an outline of the report format and the required report content. The respondents will prepare a final FS report which incorporates EPA's comments.